

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

WSOU INVESTMENTS, LLC, d/b/a
BRAZOS LICENSING AND
DEVELOPMENT,

Plaintiff,

v.

HEWLETT PACKARD ENTERPRISE
COMPANY,

Defendant.

Civil Action No. 6:20-cv-00725-ADA
Civil Action No. 6:20-cv-00726-ADA
Civil Action No. 6:20-cv-00727-ADA
Civil Action No. 6:20-cv-00728-ADA

DEFENDANT'S RESPONSIVE MARKMAN BRIEF

TABLE OF CONTENTS

I.	THE '534 PATENT CLAIM TERMS	1
A.	“associated IP service controller (IPSC)” (claims 1, 20) / “IP service controller (IPSC) associated with a CE” (claim 24).....	2
B.	“unique loop-back addresses of customer edges (CE)” (claims 1, 24) / “unique loop-back addresses of other customer edges (CE)” (claim 20)	5
C.	“broadcasting from said associated IPSC, said IP addresses of said associated customer networks to other IPSCs” (claims 1, 20, 24)	7
II.	THE '630 PATENT CLAIM TERMS	8
A.	“a customer policy comprising a tunneling mode and a tunnel group identifier” (claims 1, 12, 18)	8
B.	“corresponding to the tunnels” (claim 1)	11
C.	“policy targets” (claims 12, 18)	12
III.	THE '832 PATENT CLAIM TERMS	15
A.	“interest value” (claim 1)	15
B.	“information data representative of at least two chosen criteria” (claim 1)	16
C.	“a processing means for . . .” (claim 1).....	17
D.	“deducing an ideal solution from performances of said possible paths on at least one of said criteria” (claim 1)	21
IV.	THE '056 PATENT CLAIM TERMS	22
A.	“VC label in a layer 2 MPLS label stack” (claims 1, 18, 21)	23
B.	“dynamically determined” (claims 1, 18, 21)	25

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Akzo Nobel Coatings, Inc. v. Dow Chem. Co.</i> , 811 F.3d 1334 (Fed. Cir. 2016).....	4
<i>Augme Techs., Inc. v. Yahoo! Inc.</i> , 755 F.3d 1326 (Fed. Cir. 2014).....	20, 21
<i>Auto-Dril, Inc. v. Nat’l Oilwell Varco, LP.</i> , 304 F. Supp. 3d 587 (S.D. Tex. 2018)	19
<i>Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP</i> , 616 F.3d 1249 (Fed. Cir. 2010).....	3
<i>Biomedino, LLC v. Waters Techs. Corp.</i> , 490 F.3d 946 (Fed. Cir. 2007).....	20
<i>Cellular Commc’ns Equip. LLC v. AT&T, Inc.</i> , No. 2:15-CV-576, 2016 WL 7364266 (E.D. Tex. Dec. 19, 2016)	11
<i>Chef Am., Inc. v. Lamb-Weston, Inc.</i> , 358 F.3d 1371 (Fed. Cir. 2004).....	4
<i>Cochlear Bone Anchored Sols. AB v. Oticon Med. AB</i> , 958 F.3d 1348 (Fed. Cir. 2020).....	19
<i>Ergo Licensing, LLC v. CareFusion 303, Inc.</i> , 673 F.3d 1361 (Fed. Cir. 2012).....	20
<i>Halliburton Energy Services, Inc. v. M-I LLC</i> , 514 F.3d 1244 (Fed. Cir. 2008).....	14, 25, 27
<i>Honeywell Int’l, Inc. v. ITT Indus., Inc.</i> , 452 F. 3d 1312 (Fed. Cir. 2006).....	7
<i>In re Koninklijke Philips Pat. Litig.</i> , No. 18-CV-01885-HSG, 2020 WL 7392868 (N.D. Cal. Apr. 13, 2020).....	19
<i>Med. Instrumentation & Diagnostics Corp. v. Elekta AB</i> , 344 F.3d 1205 (Fed. Cir. 2003).....	20, 21
<i>Merck & Co. v. Teva Pharm. USA, Inc.</i> , 395 F.3d 1364 (Fed. Cir. 2005).....	5

<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 572 U.S. 898 (2014).....	11, 13
<i>Neville v. Found. Constructors, Inc.</i> , 972 F.3d 1350 (Fed. Cir. 2020).....	3
<i>Power Mosfet Techs., L.L.C. v. Siemens AG</i> , 378 F.3d 1396 (Fed. Cir. 2004).....	5
<i>Process Control Corp. v. Hydrexclaim Corp.</i> , 190 F.3d 1350 (Fed. Cir. 1999).....	5
<i>Wi-LAN, Inc. v. Apple Inc.</i> , 811 F.3d 455 (Fed. Cir. 2016).....	23
<i>Williamson v. Citrix Online, LLC</i> , 792 F.3d 1339 (Fed. Cir. 2015).....	19
<i>WMS Gaming, Inc. v. Int’l Game Tech.</i> , 184 F.3d 1339 (Fed. Cir. 1999).....	20

TABLE OF EXHIBITS

No.	DESCRIPTION
1	U.S. Patent No. 7,280,534
2	Newton's Telecom Dictionary (16th and a Half ed. 2000)
3	USPTO Examiner's Amendment, dated June 7, 2007
4	U.S. Patent No. 7,386,630
5	Applicant Arguments/Remarks, dated October 30, 2007
6	Applicant Arguments/Remarks, dated May 4, 2005
7	USPTO Notice of Allowance, dated February 1, 2008
8	U.S. Patent No. 7,443,832
9	U.S. Patent No. 7,519,056
10	Transport of Layer 2 Frames Over MPLS Memo dated April 2002, Martini et al.
11	Declaration of Paul S. Min, Ph.D., dated March 1, 2021
12	RFC 5036 – LDP Specification, dated October 2007
13	RFC 3036 – LDP Specification, dated January 2001
14	RFC 2702 – Requirements for Traffic Engineering Over MPLS, dated September 1999

Defendant Hewlett Packard Enterprise Company (“HPE”) submits this brief in response to WSOU’s Opening Claim Construction Brief (Dkt. No. 37) addressing terms of U.S. Patent No. 7,280,534 (“the ’534 Patent”); U.S. Patent No. 7,386,630 (“the ’630 Patent”); U.S. Patent No. 7,443,832 (“the ’832 Patent”); and U.S. Patent No. 7,519,056 (“the ’056 Patent”).

This brief addresses the claim terms or phrases that the parties dispute across these four patents.¹

I. THE ’534 PATENT CLAIM TERMS

As the specification makes clear and WSOU agrees, the ’534 Patent is directed to a method of providing routing services in layer-2 networks. Ex. 1, ’534 Patent at Abstract, 1:1-10, 1:64-67, 2:51-55, 7:61-64; Dkt. No. 37 at 1-2.² Consistent with this, HPE’s proposed constructions clarify the essential grounding of the claims in layer 2 technology and otherwise aid the jury in making sense of the inventor’s choice of words in light of the intrinsic evidence.

As detailed below, HPE agrees with WSOU’s characterization of the plain and ordinary meaning of several words that appear in the claims, but HPE believes that construing the claims to expressly reflect those characterizations is critical to accurately conveying the scope of the claims to the jury. The substantive claim construction disputes regarding the ’534 Patent center on giving effect to the inventor’s choice of words and ensuring that the claims are read consistently with the ’534 Patent’s fundamental objective to “enable[] a service provider (SP) having a layer-2 (L2) type infrastructure to offer BGP/MPLS-like managed VPN (Virtual Private Network) services for its customers.” Ex. 1, ’534 Patent at 2:51-55.

¹ Emphases in quotations throughout the brief are added, unless otherwise indicated.

² “Layer 2” is the data link layer of a networking protocol. *See* Ex. 1, ’534 Patent at 1:64-66 (describing layer 2 “point-to-point connectivity”); *see also* Ex. 2, Newton’s Telecom Dictionary at 577 (16th and a Half ed. 2000) (identifying layer 2 as the “link layer” in contrast to layer 3, the “network layer”).

A. “associated IP service controller (IPSC)” (claims 1, 20) / “IP service controller (IPSC) associated with a CE” (claim 24)

HPE’s Proposed Construction	WSOU’s Proposed Construction
one of at least two distinct mechanisms for exchanging routing information between at least two customer edge switches that is installed either on the switches themselves or at a remote server where it maintains a fixed association with a subset of customer edges	plain and ordinary meaning

While nominally arguing that this term should be given its plain and ordinary meaning, WSOU emphasizes that “the IPSC is a module installed within a networking device that ‘serves as a mechanism for exchanging routing information [] between the edge switches 108, as opposed to forwarding data.’” Dkt. No. 37 at 2 (citing ’534 Patent at 4:21-25). HPE’s construction conveys these same points: (1) the IPSC is a module (or “mechanism”); (2) it is installed on a networking device; and (3) the routing information it exchanges moves between edge switches (i.e. at least two customer edge switches). HPE’s construction captures these apparently undisputed points and additionally addresses (1) the inventor’s distinction between routing information sent via the IPSC and routing information sent from a customer edge (“CE”)³; and (2) the meaning of “associated” in the claim term.

WSOU correctly identifies the IPSC as a “module” or “mechanism” for exchanging routing information. Dkt. No. 37 at 2. The claim language shows that the IPSC cannot, however, be the sole mechanism for exchanging routing information at work in a system that practices the claims. The claims repeatedly contrast the IPSC with the CE as different mechanisms for exchanging routing information, with certain steps in the independent claims requiring distinct roles for each. Examples include one IPSC sending routing information to other IPSCs; CEs sending each other routing information without mention of the IPSC; and CEs sending routing

³ A “customer edge” or “CE” is a network device, typically a router, located at the same site as an end user. *See* Ex. 1, ’534 Patent at 1:44-46.

information to IPSCs. *See* Ex. 1, '534 Patent at 8:15-26; 10:3-14; 10:34-46. Limitations such as “sending, from each CE to an associated IPSC, a list of received loop-back addresses” would be nonsensical if the IPSC and the CE were one and the same. There must be two mechanisms for exchanging routing information: an IPSC and a CE. Therefore, the context of the claims requires that the IPSC be one of at least two mechanisms for transferring such information. *See Neville v. Found. Constructors, Inc.*, 972 F.3d 1350, 1357 (Fed. Cir. 2020) (“[T]he use of these ‘two terms in a claim requires that they connote different meanings.’”); *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.”) (citations omitted). The prosecution history further reinforces the distinction between the two mechanisms. *See* Ex. 3, 06/07/2007 Examiner’s Amendment at 3 (allowing independent claims upon finding that a prior art reference “does not disclose how the CE sends a list of loopback addresses to IPSC and IPSC sends other IP addresses from other CEs that are connect other IPSCs”).

HPE’s construction further clarifies that an IPSC is installed on a specific piece of hardware. As noted above, WSOU initially appears to accept that the IPSC is installed in a particular device, but elsewhere in its claim construction brief, WSOU protests that installation on an edge switch or router is not “an exhaustive list of the ways to exchange routing information.” Dkt. No. 37 at 3. To the extent WSOU means to suggest that the IPSC need not be an installed module on a specific device, it untethers the IPSC from its description in the patent (and from WSOU’s own earlier concession), demonstrating the potential for confusion and the consequent need to construe this term. The '534 Patent uniformly and unequivocally states that the IPSC is installed in hardware, specifically in an edge switch or a server. *See, e.g.*, Ex. 1, '534

Patent at 4:26-32 (“Each edge switch 108 is associated with an IPSC 130. The IPSC module 130 is *installed in the edge switch* 108, for example, on a controller card installed in the edge switch 108. However, in an alternative embodiment, the IPSC 130 may be *implemented in a server* (e.g., server 118 of FIG. 1), which is connected to and supports one or more edge switches”); 5:50-52 (“Referring to FIG. 1, the routing protocol is illustratively sent over path 112 between the IPSC₁ 130₁ *at the first edge switch* 108, and the IPSC₂ *located at the server* 128.”); 7:66-8:2 (“Rather, the IPSC 130 may be *implemented on a controller card of a provider edge device (switch) or on a separate server*, where appropriate.”). Accordingly, the mere ability to exchange routing information does not mean an IPSC is present.

In the same vein, HPE’s proposal that the term “associated” reflect a “fixed association” gives meaning to the inventor’s choice of the word “associated” as opposed to merely “connected,” “available to,” “used by,” or just “IPSC” alone in describing the IPSC’s relationship with specific customer edges. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016) (construing “pressurized collection vessel” to require accumulating rather than merely receiving material, because “allowing ‘collection’ to mean ‘receive’ would render ‘collection’ entirely superfluous and allow any pressurized vessel to constitute a ‘pressurized collection vessel.’”). Again, the ’534 Patent contemplates that each IPSC is a distinct module, installed on a specific piece of hardware, associated with specific customer edges. WSOU’s argument against this construction has no affirmative support, but instead consists of a parade of horrors purporting to result from requiring a fixed association. Dkt. No. 37 at 3. Despite WSOU’s objection that the result is “illogical and impractical,” courts may not redraft claims to render them valid. *Id.*; see *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371 (Fed. Cir. 2004) (“This court, however, repeatedly and consistently has recognized

that courts may not redraft claims, whether to make them operable or to sustain their validity. . . . Even ‘a nonsensical result does not require the court to redraft the claims.’”) (quoting *Process Control Corp. v. Hydrexclaim Corp.*, 190 F.3d 1350, 1357 (Fed. Cir. 1999)).

In fact, no one is arguing that the ’534 Patent forbids users from ever making adjustments to the network, or mandates that no device can ever go offline. The point is that when the customer edge is online, it is always connected to the same identifiable IPSC. WSOU’s resistance to the “fixed association” requirement introduces the risk that WSOU will claim any fleeting, split-second interaction between an IPSC and a customer edge makes them “associated” with each other. This would render the term “associated” superfluous, as the patent already defines the individual transactions between IPSCs and CEs. *See Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”) (citations omitted); *Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004) (“[I]nterpretations that render some portion of the claim language superfluous are disfavored.”) (citation omitted).

B. “unique loop-back addresses of customer edges (CE)” (claims 1, 24) / “unique loop-back addresses of other customer edges (CE)” (claim 20)

HPE’s Proposed Construction	WSOU’s Proposed Construction
unique IP addresses over the OOB (out-of-band) control virtual circuit, where the OOB control virtual circuit defines paths by ATM (Asynchronous Transfer Mode), FR (Frame Relay) or other layer 2 connectivity type, and where the IPSC stores the CE loop-back information in the routing databases (tables)	plain and ordinary meaning

The parties are in accord on one key issue in the construction of this term: a “loop-back address” is a “unique IP address.” Dkt. No. 37 at 4. WSOU’s brief (*id.* at 5) indulges in speculation that a closed-parenthesis should be added after the words “IP address” in the sentence that reads: “A CE device 122 advertises its loop-back address (*i.e.*, a unique IP address

over the OOB control virtual circuit 124, where the IPSC 130 stores the CE loop-back information in the routing databases (tables) 308.” Ex. 1, ’534 Patent at 5:25-29). The parenthesis could just as easily belong at the end of the sentence, but even in WSOU’s edited version, “unique IP address” is definitional. Dkt. No. 37 at 5.

Regardless of where the parenthesis belongs, the more significant issue is the use of layer 2 connectivity for the claimed addresses. The proper construction of the full term “unique loop-back addresses of customer edges (CE)” must account for the exclusive manner in which these addresses are described in the specification. Consistent with the purpose of the invention and all examples provided in the specification, all of the unique loop-back addresses of the CEs must run over layer 2 connections. There is only one type of circuit over which CE IP addresses loop back according to the invention: a *layer 2* data virtual circuit. Ex. 1, ’534 Patent at 3:14-18 (“the exemplary network 100 is discussed in terms of an ATM infrastructure, although other embodiments contemplated herein include network infrastructures for frame relay or any other *L2 type architecture*”); 5:25-29 (explaining that loop-back addresses travel over data virtual circuits); 6:63-65 (same); 7:35-38 (same). The specification discloses ATM and FR as illustrative examples of *layer 2 connections*. Layer 2 connections are no mere illustrative example, but rather a critical aspect of the invention as a whole. *See, e.g., id.* at 1:8-10 (“*the present invention* relates to providing managed IP routing services for *layer-2 (L2) overlay IP VPNs*”). This is especially clear given that the basic objective of the invention to give layer 2 systems layer 3 qualities. *Id.* at 2:51-55 (“*the present invention* provides a method and apparatus that enables a service provider (SP) having a layer-2 (L2) type infrastructure to offer BGP/MPLS-like managed VPN (Virtual Private Network) services for its customers”). The ’534 Patent’s usage—twice—of “the present invention” to recite the layer 2 requirement demonstrates

an intent to define the invention as a whole. *Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F. 3d 1312, 1318 (Fed. Cir. 2006).

C. “broadcasting from said associated IPSC, said IP addresses of said associated customer networks to other IPSCs” (claims 1, 20, 24)

HPE’s Proposed Construction	WSOU’s Proposed Construction
sending, by an IPSC, the IP addresses of said associated customer networks to other IPSCs over a layer 2 (i.e., Frame Relay or ATM) medium	plain and ordinary meaning

The parties’ dispute on the broadcasting limitation similarly focuses on whether the claims are limited to layer 2 implementation. HPE does not dispute WSOU’s characterization of “broadcasting” on page 6 of its brief, which distinguishes “broadcasting” from “sending” by defining it as simultaneous sending from one source to more than one destination. *See* Dkt. No. 37 at 6. HPE does however dispute any characterization of this claim term that allows for broadcasting to be performed over a non-layer 2 medium. WSOU’s own cited specification evidence supports HPE’s construction on this point. “[T]he specification discloses that a benefit of the invention is enabling a ‘service provider to provide IP-VPN services for customers and service providers *utilizing layer-2 point-to-point connectivity*, such as ATM, frame relay, *and the like*, in a cost-effective manner.’” Dkt. No. 37 at 7 (emphasis in original) (citing ’534 Patent at 8:2-6). Here, the illustrative modifiers “such as” and “and the like” each modify “ATM” and “frame relay,” *not* “layer-2 point-to-point connectivity.” At best, this is an argument for changing “i.e.” to “e.g.” in HPE’s proposed construction, not a basis to remove “layer 2” altogether. As noted above, the ’534 Patent claims a method of using layer 2 architecture to achieve layer 3-like results. The ’534 Patent’s purpose would accordingly be undermined by disregarding the layer 2 limitations so clearly outlined in the specification. *See supra* § I.B.

II. THE '630 PATENT CLAIM TERMS

The '630 Patent is directed to provide a “commercial solution addressing the policy management of Diffserv over MPLS with regard to the configuration of E-LSP and tunneling mode.” Ex. 4, '630 Patent at 2:40-42. Specifically, the '630 Patent “provides devices, software and methods for policy based management of two combined functionalities (Diffserv over MPLS) in a single network.” *Id.* at 4:19-21.

“Differentiated services (Diffserv) provides a scalable Quality of Service (QoS) support for internet protocol (IP) networks.” *Id.* at 1:49-51. MPLS “classif[ies] incoming IP packets into one of the available forward equivalent classes (FEC) or groups of packets” and “similarly classified packets are then forwarded in the same manner (i.e., follow the same path) inside the domain,” but MPLS “does not define or contain QoS services.” *Id.* at 2:5-25.

A. “a customer policy comprising a tunneling mode and a tunnel group identifier” (claims 1, 12, 18)

HPE's Proposed Construction	WSOU's Proposed Construction
a policy of a network user that comprises a selected tunneling mode that defines the method of translating the Diffserv information in the MPLS headers into the DSCP value in the encapsulated IP header when packets exit the MPLS network, and comprises a named identifier of groups of network tunnels with similar properties that form a certain topology	plain and ordinary meaning

Examination of the '630 Patent specification confirms that a “customer policy” is a policy that is inherently utilized by a network user. Specifically, a “customer policy,” as defined by the '630 Patent, is a policy that “defines traffic rules on the network” and “govern[s] the treatment of individual customer traffic.” Ex. 4, '630 Patent at 10:25-26, *id.* at 7:4-5. These customer policies are “deployed to the policy targets,” which “results in implementing the policy across at least part of the network.” *Id.* at 10:52-56. The '630 Patent defines the term “user” to

“refer[] to any person or customer such as a business organization that employs a device to communicate or access resources over a network.” *Id.* at 4:3-6. Because the customer policy “defines traffic rules on a network” by being deployed “across at least part of [a] network,” by a “user” that is “employ[ing] a device to communicate or access resources over a network,” the customer policy must necessarily be a policy of a network user.

The customer policy’s “tunneling mode” is clearly defined by the ’630 Patent as the method of translating the Diffserv information of MPLS headers into the DSCP value of packets exiting the MPLS network:

[t]unneling mode defines the method of translating the Diffserv information in the MPLS headers (labels and EXP field) into the DSCP value in the encapsulated IP header when packets exit the MPLS network. There are two essential modes of tunneling: pipe mode and uniform mode. For pipe mode, the egress router keeps the DSCP of the encapsulated IP header. For uniform mode, the egress router overwrites the original DSCP with the DiffServ information contained in the MPLS Shim Header.

Id. at 2:62-3:5. Additionally, the ’630 Patent, consistent with this definition, provides that “[t]unneling mode decides which DSCP code point is carried in the IP headers when a packet exits the MPLS network.” *Id.* at 8:13-14.

Whereas WSOU contends that this is merely a description of the state of the art, the prosecution history of the ’630 Patent demonstrates that this was the Applicant’s clearly intended definition of “tunneling mode.” For instance, in attempting to overcome the prior art, the ’630 Patent Applicant argued that:

The present application provides that a tunneling mode indicating what Diffserv code point should be carried in the IP headers then [sic] packets exit on MPLS network, as to enable transport of Diffserv over MPLS. ***A tunneling mode is defined in the description*** as a method of translating the Diffserv information in MPLS headers (labels and EXP field) into DSCP values in the encapsulated IP header when packets exit the MPLS network. It is desirable for a policy to be able to determine the method of translating Diffserv information. The claimed method is also advantageous since it allows policy to be defined and implemented across

multiple network elements, which includes a definition of a tunneling mode, as well as treatment of a particular customer's traffic.

Ex. 5, Applicant Arguments/Remarks of October 30, 2007, at 12-13. Likewise, the Applicant similarly submitted this definition to the Examiner earlier in the prosecution, stating that “applicants’ specification explains that ‘[t]unneling mode defines the method of translating the Diffserv information in the MPLS headers (labels and EXP field) into the DSCP value in the encapsulated IP header when packets exit the MPLS network,’” and requesting that the Examiner’s rejection be withdrawn because the prior art “d[id] not disclose or suggest the tunneling limitations *as defined by the specification*.” Ex. 6, Applicant Arguments/Remarks of May 4, 2005, at 11. Even the USPTO’s Notice of Allowance provides that the ’630 Patent was issued because the prior art failed to disclose “the feature of configuring a customer policy comprising a tunnel mode . . . *wherein Applicant’s disclosure defines the tunnel mode* as a method of ‘translating Diffserv information in the multi-protocol label switching header into DSCP values’ having two modes: uniform or pipe mode.” Ex. 7, USPTO Notice of Allowance at 6. The ’630 Patent prosecution history makes clear that this definition of “tunneling mode,” as prescribed by the patent itself, was the desired definition of the patentee’s clearly expressed intent, and not merely a description of the state of the art.

The customer policy’s “tunnel group identifier” is also clearly defined as a singular identifier for groups of network tunnels that share similar properties and form certain topologies. Specifically, the ’630 Patent is directed to a policy server that “is arranged to create a group of MPLS tunnels, and associate the tunnels of the mapping policy and the customer policy.” ’630 Patent Abstract. A tunnel group is “a set of tunnels that share the same properties and form a certain topology, such as a mesh or a star.” Ex. 4, ’630 Patent at 7:41-43. In attempting to overcome the prior art, the Applicants stated that “[their] specification explains that a tunnel

group ‘is a set of tunnels that share the same properties and form a certain topology,’ and that the prior art did not disclose the Applicants’ invention because it “d[id] not disclose or suggest any equivalent grouping, or a single identifier for such grouping,” and that the prior art “d[id] not group these tunnels by shared properties or to form a certain topology.” Ex. 6, Applicants’ Remarks of May 4, 2005, at 10-11. And per the specification, when there is a group of MPLS tunnels, in order to “associate the tunnels to the mapping policy and the customer policy” and “maps customer traffic to MPLS tunnels,” the customer policy must include a tunnel group identifier that identifies tunnel groups. Ex. 4, ’630 Patent at 4:48-53. Because the customer policy’s tunnel group identifier must identify tunnel groups, it necessarily follows that the tunnel group identifier must identify groups of these MPLS tunnels with similar properties and that form a certain topology, thus fully supporting HPE’s construction for this portion of the phrase as well.

In light of the intrinsic evidence of the ’630 Patent, HPE’s proposed claim construction should be adopted in favor of WSOU’s “plain and ordinary meaning” construction, which neglects the definitions explicitly provided by the specification and prosecution history.

B. “corresponding to the tunnels” (claim 1)

HPE’s Proposed Construction	WSOU’s Proposed Construction
indefinite	plain and ordinary meaning

The claim term “corresponding to the tunnels” is indefinite for lack of antecedent basis. *See Cellular Commc’ns Equip. LLC v. AT&T, Inc.*, No. 2:15-CV-576, 2016 WL 7364266, at *8-11 (E.D. Tex. Dec. 19, 2016) (finding claims indefinite where antecedent basis was lacking). This claim term’s lack of antecedent basis ultimately results in the claim entirely “fail[ing] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

Claim 1 recites, in part:

1. A system comprising:
a policy server device that is arranged to . . .
send the mapping policy and the customer policy to interfaces of devices of
a network that includes multi-protocol label switching tunnels,
corresponding to the tunnels, at least one of the network devices
comprising an egress interface of one of said multi-protocol label switching
tunnels, wherein the interfaces and the customer policy are associated with
a same role name.

Ex. 4, '630 Patent at 11:35-49. Nowhere previously are these tunnels introduced or explained in such a way as to provide “reasonable certainty” as to the scope of the invention. Whereas this claim directly lists numerous elements of the invention, (e.g., a mapping policy, a customer policy, interfaces, devices of a network, multi-protocol label switching tunnels, egress interfaces, and role names) it is entirely ambiguous, unclear, and uncertain just which of these elements of the claimed invention is supposed to somehow “correspond[] to the tunnels.”

Further, it is entirely ambiguous, unclear, and uncertain just what, exactly, it *means* for some element of the claimed invention to “correspond[] to the tunnels,” or even what “the tunnels” are. Specifically, this “correspond[ence] to the tunnels” is not explained or described, nor does it even appear in the '630 Patent, prior to its antecedent-basis-lacking introduction in the claims.

In light of the uncertainty surrounding what portion of the invention “correspond[s] to the tunnels,” the uncertainty of what it means for something to “correspond[] to the tunnels,” and the uncertainty as a result of a lack of antecedent basis to introduce “the tunnels,” the Court should find that this claim is invalid as indefinite.

C. “policy targets” (claims 12, 18)

HPE’s Proposed Construction	WSOU’s Proposed Construction
indefinite	network nodes where the mapping policy, the network policy, and/or the

	customer policy, including any specific routing assignments dictated by such policies, are enforced
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The claim term “policy targets” is indefinite for lack of antecedent basis. Because the “policy targets” are not first properly explained or introduced via the claim language, any reference to such “policy targets” otherwise present in the ’630 Patent “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 572 U.S. at 901. Rather, just what, exactly, a “policy target” is or how it properly interacts or interfaces with the rest of the claimed elements is both ambiguous and amorphous.

Claim 18 recites, in part:

18. A method comprising:

...
 sending the device-specific commands to *policy targets*, wherein each policy target comprises a network device that includes an interface assigned a role name associated with the customer policy, at least one of the interfaces comprising an egress interface of one of multi-protocol label switching tunnels.

Ex. 4, ’630 Patent at 13:32-14:14. Claim 12 contains similar language, but is directed to an article, and replaces the word “sending” with “deploying.” Nowhere previously, in either of these claims, are “policy targets” mentioned or introduced in such a way as to provide “reasonable certainty” as to the scope of the invention. The claims simply commence reciting an occurrence that happens to “policy targets” (namely, sending or deploying the device-specific commands to them) without ever introducing them as, for example, “a set of” or “a first and a second” policy target[s] or placing them in the context of the invention.

WSOU attempts to construe “policy targets” as being “network nodes where the mapping policy, network policy, and/or the customer policy . . . are enforced.” However, each instance of a “policy target” cited by WSOU indicates that the policy target is not a “network node,” itself, but some embodiment of a “network device.” *Id.* at 5:52-53 (“A policy target refers to any

network device *at a network node*”); *id.* at 4:56-57 (“In this case, policy targets are network devices”). Further, both of these instances cited by WSOU are not definitive statements of what a “policy target” is, generally, but are only specific examples in the context of possible embodiments. *Id.* at 4:56-57 (“***In this case***, policy targets are network devices”); *id.* at 5:28-57 (“FIG. 4B is a block diagram . . . ***according to an embodiment of the invention*** . . . A policy target refers to any network device”). Although the “policy targets” are briefly mentioned in the context of possible embodiments, a person of ordinary skill in the art would still be unable to ascertain the scope of this term and the invention and, thus, the claim is indefinite. *Halliburton Energy Services, Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008) (“The fact that [Patent Owner] can articulate a definition supported by the specification, however, does not end the inquiry. Even if a claim term’s definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.”).

The ’630 Patent specification’s insufficiently brief references to “policy targets” do not provide clarity or “reasonable certainty” as to the scope of the invention. Whereas these brief references indicate that “policy targets” are some embodiment of a “network device,” the ’630 Patent circularly and confusingly defines a “network device” as “any network device that can be a policy server.” *Id.* at 5:10-11. Thus, the ’630 Patent seems to indicate that the “policy targets” are “any network device that can be a policy server.” *See id.* Ultimately, these descriptions do not clarify just what a “policy target” is, outside the scope of merely being capable of being a “policy server.” This description, however, causes confusion as to how “policy targets” interact with the other elements of the asserted claims, because the ’630 Patent is supposedly directed to

the interaction between policy servers and “policy targets,” yet it is unclear how a “policy target” is not simply, in and of itself, a policy server.

The ’630 Patent does not properly explain or describe what a “policy target” is, nor does it clearly describe how it physically or conceptually interacts with other elements of the asserted claims. Because of this, it does not inform those skilled in the art, with reasonable certainty, as to the scope of the invention, and the Court should find these claims invalid for indefiniteness.

III. THE ’832 PATENT CLAIM TERMS

The ’832 Patent is directed to a particular protocol for routing communications between devices connected to a network. In the environment described by the ’832 Patent, a network contains numerous routers that collectively work to transmit information between user devices. To accomplish the goal, communications are routed through the network from a “label edge router” (LER) through a series of “label core routers” (LCRs) to another LER to eventually reach their destination user device. Ex. 8, ’832 Patent at 1:11-20.

There are numerous paths over which information could be routed to accomplish communications between LERs. Real-world networks involve many routers and provide a vast number of path options for communications between devices. The ’832 Patent claims a specific method of choosing a “switchpath” for data between label edge routers based on the observed performance of each individual connection in the network.

A. “interest value” (claim 1)

HPE and WSOU have agreed to the construction “a number that quantifies the performance difference between a possible path and the ideal solution” for the claim term “interest value.”

B. “information data representative of at least two chosen criteria” (claim 1)

HPE’s Proposed Construction	WSOU’s Proposed Construction
data representative of two or more numeric values that identify the resources associated with the various connections between nodes	plain and ordinary meaning

The term “information data” is used throughout the specification of the ’832 Patent, and explicitly defined as follows:

In particular, *the information data defines the resources associated with the various connections between nodes*, in terms of characteristics and availability, and the list of LSR nodes, which is regularly updated. The resource characteristics include in particular the topology (available links), bandwidth and transit time between two nodes of a connection. This information is generally provided by a connection status protocol such as the Open Shortest Path First (OSPF) protocol when the latter supports traffic management by exchange of Traffic Engineering-Link State Advertisements (TE-LSAs). Other network utilization characteristics, such as the colors authorized on a connection, the authorized classes of service or the administrative cost of a connection are supplied by the Network Management System (NMS).

Ex. 8, ’832 Patent at 5:65-6:11 (emphasis added). Consistent with HPE’s proposed construction, the specification therefore teaches that “information data” should identify “the resources associated with the various connections between nodes.” *Id.*

As for the “chosen criteria” portion of the phrase at issue, the specification provides examples of such criteria as follows:

[T]he criteria belong to a group comprising at least the available bandwidth, the number of hops on the path, the duration of the path, a wavelength division multiplexing capacity, a concatenation capacity, an assignment capacity, and a protection capacity.

Id. at 3:60-4:3. Consistent with HPE’s proposed construction, the examples of “criteria” in the specification are each numerical values that identify the resources associated with the various connections between nodes.

WSOU misunderstands both the claim term and HPE’s argument when arguing against HPE’s construction. WSOU argues that there are two different types of information data recited by the claim. Dkt. No. 37 at 14. But neither the claim nor the specification distinguishes between different types of information data—both merely use that term consistent with its sole definition in the specification. *See* Ex. 8, ’832 Patent at 5:65-6:11. While the claim does use the term in two different locations, it only states that the information data is *representative* of “two chosen criteria” or “a state of utilization and of a topology of the network,” not that the concept of the information data itself is somehow different between those terms. The examples of criteria that WSOU provides—“length of the path,” “the number of hops,” “the required bandwidth,” and “other constraints” are consistent with HPE’s proposed construction of “data representative of two or more numeric values that identify the resources associated with the various connections between nodes.” Dkt. No. 37 at 14-15. HPE’s construction is the only construction consistent with the plain language and the explicit definition in the specification, and it should therefore be adopted.

C. “a processing means for . . .” (claim 1)

HPE’s Proposed Construction	WSOU’s Proposed Construction
<p>Means plus function.</p> <p>The function is “a) receiving a path set-up request containing a set of service data associated with a stream to be switched, and for determining in said table at least two criteria stored in corresponding relationship to said set of service data associated with the stream,</p> <p>b) ensuring the connectivity of said multiplicity of label switched routers, on the basis of information data stored in said descriptive structure,</p> <p>c) calculating from among said label switch routers possible paths between a departure node and a destination node taking account of at least one of said</p>	<p>plain and ordinary meaning, not subject to 35 U.S.C. § 112, ¶ 6</p>

<p>two criteria that have been determined and then deducing an ideal solution from performances of said possible paths on at least one of said criteria,</p> <p>d) assigning each possible path an interest value taking account of said ideal solution and then classifying said possible paths taking account their respective interest values, and</p> <p>e) selecting a path from among said classified possible paths and then associating with said stream to be switched a label representative of said selected path so that said labeled stream is switched via said path to the destination node.”</p> <p>The term is indefinite for insufficient disclosure of structure corresponding to the function.</p> <p>Alternatively, the corresponding structure is 2:42-4:8 and 5:48-10:7 of the specification.</p>	
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Claim 1 of the '832 Patent recites “a processing means for:” followed immediately by a five-step function:

a processing means for:

- a) receiving a path set-up request containing a set of service data associated with a stream to be switched, and for determining in said table at least two criteria stored in corresponding relationship to said set of service data associated with the stream,
- b) ensuring the connectivity of said multiplicity of label switched routers, on the basis of information data stored in said descriptive structure,
- c) calculating from among said label switch routers possible paths between a departure node and a destination node taking account of at least one of said two criteria that have been determined and then deducing an ideal solution from performances of said possible paths on at least one of said criteria,
- d) assigning each possible path an interest value taking account of said ideal solution and then classifying said possible paths taking account their respective interest values, and
- e) selecting a path from among said classified possible paths and then associating with said stream to be switched a label representative of said selected path so that said labeled stream is switched via said path to the destination node.

Ex. 8, '832 Patent at 11:43-67. The steps labeled “a)” through “e)” are the function set forth in HPE’s proposed construction.

WSOU correctly acknowledges that claim terms reciting the word “means” in the body—such as this claim term—are written in means-plus-function format and subject to 35 U.S.C. § 112, ¶ 6. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015); Dkt. No. 37 at 16. Despite this, WSOU wrongly argues that the bare-bones term “processing means” recites sufficiently definite structure to render the term *not* subject to § 112, ¶ 6. That position must be rejected for numerous reasons.

Initially, courts routinely hold that the phrase “processing means” is a means-plus-function claim term that must be construed under § 112, ¶ 6. *See, e.g., In re Koninklijke Philips Pat. Litig.*, No. 18-CV-01885-HSG, 2020 WL 7392868, at *20(N.D. Cal. Apr. 13, 2020) (data processing means subject to § 112, ¶ 6); *Cochlear Bone Anchored Sols. AB v. Oticon Med. AB*, 958 F.3d 1348, 1352 (Fed. Cir. 2020) (signal processing means subject to § 112, ¶ 6); *Auto-Dril, Inc. v. Nat’l Oilwell Varco, LP.*, 304 F. Supp. 3d 587, 621 (S.D. Tex. 2018), as amended (Apr. 20, 2018), *aff’d*, 757 F. App’x 1012 (Fed. Cir. 2019) (computer data and program processing means subject to § 112, ¶ 6). In each of these cases (just like here), the claim at issue recited no additional structure beyond the claimed “processing means” and was held to be written in means-plus-function format. Indeed, the entire remainder of Claim 1 after the phrase “processing means for:” is a recitation of the functions the processing means must execute. Ex. 8, '832 Patent at 11:44-67. There is accordingly nothing else recited in the claim that could impart structure sufficient to overcome the presumption that the claim is subject to § 112, ¶ 6.

WSOU does not dispute that the claim recites no further structural limitations, but nevertheless contends that the *function* described in the claim somehow “recites a structural

definition because it details the procedures to performed by the claimed processing means.” Dkt. No. 37 at 17. WSOU provides no authority for the position that a function appearing in the claim itself can confer sufficiently definite structure onto a term to render it outside the scope of § 112, ¶ 6. Indeed, the opposite is true—a structure must be disclosed in the specification to carry out that function. *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1363 (Fed. Cir. 2012). And, critically, the corresponding structure for a means-plus-function claim implemented with software must include an algorithm that is more than a restatement of the claimed function. *See WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999); *Augme Techs., Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1337 (Fed. Cir. 2014).

Once a claim term is deemed to be subject to § 112, ¶ 6, a corresponding structure in the specification must be identified. *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 948 (Fed. Cir. 2007). If no such structure exists, the claim term is indefinite. *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003). In this case, the specification fails to recite any specific structure—specifically, an algorithm—that corresponds to the claimed “processing means for” accomplishing the multi-part claimed function, rendering the claim term indefinite. *See Ergo Licensing*, 673 F.3d at 1363.

Indeed, the only purported structure that WSOU even attempts to point to in the specification is “the disclosure of exemplary, non-limiting mathematical formulas known to those in the art.” Dkt. No. 37 at 18 (citing ’832 Patent at 5:36-9:55). But this characterization as “exemplary” and “non-limiting” gets § 112, ¶ 6 wrong: the very point of this law is that the disclosed structure *is* limiting. 35 U.S.C. § 112, ¶ 6 (“such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof”). WSOU also fails to provide any discernible argument that this structure is “clearly linked or

associated with the claimed function” as the law requires. *Med. Instrumentation*, 344 F.3d at 1219.

Nonetheless, to the extent WSOU is correct that this portion of the specification is the corresponding structure, infringement would require practicing the entirety of the disclosure of 5:36-9:55 or its equivalents. In fact, if WSOU’s section 5:36-9:55 qualifies as structure, the sections at 2:42-4:8 and 9:56-10:7, which explain some of the functions of the “processing means,” would also need to be added to form collectively the corresponding structure for the claimed five-step function of the “processing means.”

As noted above, however, merely reiterating the claimed functions is insufficient to establish that the specification discloses the required algorithm for performing the claimed function. *E.g., Augme Techs.*, 755 F.3d at 1337. The Court should find this term indefinite due to WSOU’s inability to identify corresponding structure.

D. “deducing an ideal solution from performances of said possible paths on at least one of said criteria” (claim 1)

HPE’s Proposed Construction	WSOU’s Proposed Construction
observing the performance of all paths based on at least one of said criteria, and determining that one path of the possible paths is ideal based on said criteria	plain and ordinary meaning

The plain language of this claim term requires “deducing an ideal solution *from performances of said possible paths on at least one of said criteria*.” Ex. 8, ’832 Patent at Claim 1. The “performance” of a path is not a theoretical construct, but must be based on an observation relating to how that path actually operates. This is confirmed by the specification, which expressly teaches that deducing the ideal solution requires actually observing the performances of the possible paths. *See id.* at 8:37-41 (“For each criterion C_p , the best performance value Z^*p *observed* over the possible paths is extracted. Each best value of

performance Z^*p *observed* is called the optimum value associated with the corresponding criterion.”). The plain language of the claim therefore supports HPE’s construction and requires that the performance of all paths be observed.

WSOU acknowledges that the claimed “deducing” must be “*from performances* of said possible paths,” and even cites to a portion of the specification that requires that each performance is “*observed*” when deducing the solution. Dkt. No. 37 at 19; Ex. 8, ’832 Patent at 8:37-44. But WSOU further fails to rebut the requirement that performances *of all paths* are observed to satisfy this claim term. Thus, there appears to be no dispute that the specification supports at least the portion of HPE’s construction that requires “observing the performance of all paths based on at least one of said criteria.” Ex. 8, ’832 Patent at Claim 1. WSOU instead appears to dispute whether the “ideal solution” described by the claims corresponds to a “possible path.” Dkt. No. 37 at 19. According to WSOU, the specification states that an “ideal solution” does not necessarily correspond to a “possible path.” *Id.* But in this claim, the ideal solution should be the ideal path of the observed possible paths, since, by its express language, it is “deduced” from “performances of said possible paths.” Ex. 8, ’832 Patent at Claim 1.

Nevertheless, in the interests of compromise and to the extent it might aid the Court, HPE is willing to agree to the following modified construction that would avoid WSOU’s purported concerns: “**deducing an ideal solution from observed performances of all possible paths based on at least one of said criteria.**” Although the plain language of the claim and the specification support HPE’s construction, this alternative proposal is consistent with WSOU’s current position, and should avoid further dispute on the construction of the term.

IV. THE ’056 PATENT CLAIM TERMS

The ’056 Patent lays claim to techniques for managing traffic in a multiport network node that is connected to another node by a multiprotocol label switching (MPLS) tunnel. Ex. 9, ’056

Patent at 1:15-17. The invention functions by “establishing logical ports that have bindings to transport tunnels” and the “logical ports are then treated the same as physical ports.” *Id.* at 3:10-11. The invention, as related to MPLS, assigns labels to “incoming packets” which “are forwarded along a ‘label switch path’ (LSP) through a series of connected ‘label switch routers.’” *Id.* at 7:5-8.

A. “VC label in a layer 2 MPLS label stack” (claims 1, 18, 21)

HPE’s Proposed Construction	WSOU’s Proposed Construction
the bottom label in a layer 2 MPLS label stack consisting of a top tunnel label and a bottom virtual circuit label, which is used by an egress label edge router to process the packet	plain and ordinary meaning

Priority is given to intrinsic evidence when discerning the meaning of claim terms. *See Wi-LAN, Inc. v. Apple Inc.*, 811 F.3d 455, 462 (Fed. Cir. 2016). Here, a skilled artisan upon reading the patent, its prosecution history, and the information incorporated by reference would understand that the ’056 Patent’s VC label, as used in a layer 2 MPLS label stack, corresponds to HPE’s proposed construction.

First, the ’056 Patent incorporates by reference IEEE Transport of Layer 2 Frames Over MPLS, as published in April 2002. *See* Ex. 9, ’056 Patent at 7:45-46 (incorporating by reference draft-martini-12circuit-trans-mpls-09, the filename of this document); *see also* Ex. 10, Martini et al., Transport of Layer 2 Frames Over MPLS Memo. This standard explains that the VC label in a layer 2 MPLS stack “*must always* be at the bottom of the label stack.” *Id.* at 4 (emphasis added). Further, the tunnel label (if present) “*must immediately be above* the VC label.” *Id.* (emphasis added). WSOU’s brief cites a newer version of the same standard (not the version incorporated by reference in the patent), but nonetheless the version WSOU cites also states that

the VC label must be at the bottom of the label stack and the tunnel label must be immediately above it. *See* Dkt. No. 37, Ex. 4 at 4.

Second, every description of a layer 2 MPLS label stack given in the '056 Patent describes it as consisting of two labels: a top MPLS “tunnel label” and a bottom “VC label.” *See generally* Ex. 9, '056 Patent at 7:20-36. A skilled artisan reading the patent specification and the incorporated references would therefore understand that a layer 2 MPLS label stack as claimed in the '056 Patent would consist of a top “tunnel label” and a bottom “VC label.”

WSOU argues that HPE’s proposed construction eliminates an embodiment, but it does not. *See* Dkt. No. 37 at 21. WSOU’s brief points to an embodiment in which the VC label is described as “the inner label” and not the bottom label. *See id.* However, this embodiment needs to be read in the context of the earlier disclosure it cross-references:

The packet is forwarded, *as described above*, with two MPLS labels. The outer MPLS label being the tunnel label and the inner label being the VC label.

Ex. 9, '056 Patent at 9:4-6 (emphasis added). The only MPLS label stack “*described above*” exactly matches HPE’s proposed construction:

The first MPLS label is placed at the top of the label stack and is referred to as the ‘tunnel label’ . . . [t]he second label is placed at the bottom of the label stack and is referred to as the “VC label.”

Id. at 7:29-33. The '056 Patent gives no other description of a layer 2 MPLS label stack preceding the “inner” and “outer” label embodiment that WSOU cites. *See id.* at 1:1-9:3. When read in context, WSOU’s “embodiment” is not excluded by, but actually is identical to, HPE’s proposed construction.

Similar to the above, a skilled artisan would understand that the VC label is “used by an egress label edge router to process the packet.” The '056 Patent makes clear that, as a general matter, a VC label is used by an egress label edge router. '056 Patent at 7:33-36 (“[t]he VC label

is used by the egress label edge router (i.e., the SPED at which the packet exits the MPLS domain) to determine how to process the packet”). In fact, every embodiment involving a VC label in the ’056 Patent includes the use of an “egress label edge router.” *See id.* at 7:30-9:41.

Contrary to WSOU’s argument, the clause “which is used by an egress label edge router to process the packet” does not eliminate a disclosed embodiment with a “service provider edge device (‘SPED’).” Dkt. No. 37 at 21-22. WSOU’s distinction is meaningless, because the “SPED” simply acts as an “egress label edge router” in this situation. *See id.* (“The VC label is the label on which the far-end SPED (*which acts as the egress label edge router*)”) (emphasis added); *see also* Ex. 9, ’056 Patent at 8:31-33 (same). Thus, the example cited by WSOU confirms that the VC label is “used by an egress label edge router to process the packet.”

B. “dynamically determined” (claims 1, 18, 21)

HPE’s Proposed Construction	WSOU’s Proposed Construction
indefinite	plain and ordinary meaning, not indefinite

A claim is indefinite when a skilled artisan is unable to “discern the boundaries of the claim” based upon intrinsic evidence and “knowledge of the relevant art area.” *Halliburton Energy Servs.*, 514 F.3d at 1249-50. Even if the claim term’s definition can be reduced to words, it is still indefinite if a person of ordinary skill in the art cannot translate the words into a meaningfully precise claim scope. *Id.*

A skilled artisan cannot discern the boundaries of “dynamically determined” based on any disclosure in the ’056 Patent, the prosecution history, or his own relevant knowledge. The term “dynamically determined” cannot be reasonably defined because there is no indication in the patent of which algorithms or techniques would be used to dynamically determine the LSP

that corresponds to the MPLS tunnel, nor is there any guidance on which factors would be considered.

A skilled artisan, as of the time the '056 Patent was filed, would not understand how to accomplish the “dynamically determined” limitation under the patent and would find the term to be vague and confusing. *See* Ex. 11, Min Declaration ¶ 36. Although the standards at the time discussed how LSPs were selected, these standards and references incorporated many different options for determining the LSP. Ex. 11, Min Declaration at ¶¶ 40-44, 49-52 (discussing the various different methods for path management methods, including “Administratively Specified Explicit Path,” “Hierarchy of Preference Rules for Multi-Paths,” “Resource Class Affinity Attributes,” “Adaptivity Attribute” selection, and “Load Distribution Across Parallel Traffic Trunks”); *see also* Ex. 12 at 5, 10, 21-22 (RFC 5036); Ex. 13 at 5, 11, 22-23 (RFC 3036); Ex. 14 at 15-18 (RFC 2702). Nor did the standards even require that an LSP be changed at all in response to conditions, such as traffic congestion. Ex. 11, Min Declaration ¶ 42 (explaining that “RFC 5036 does not dictate that an MPLS tunnel must use a different LSP upon detection of congestion or delay. According to RFC 5036, a congestion or delay in the MPLS domain can be remedied by, for example, expanding the resource reserved on the same LSP instead.”); *see also* Ex. 12 (RFC 5036); Ex. 13 (RFC 3036). It is entirely unclear whether the '056 Patent’s term “dynamically determined” is referring to one of these techniques, and if so, which one.

Moreover, these standards and the various techniques for path management contain no mention of the term “dynamically.” *See* Ex. 11, Min Declaration ¶ 52 (discussing the standards and documents available at the time the '056 Patent was filed and through its pendency at the USPTO). Based upon the relevant knowledge in the art, replete with options for path management, there is simply not enough guidance in the '056 Patent to allow a skilled artisan to

translate the term “dynamically determined” into a “meaningfully precise claim scope.” *See Halliburton Energy Servs.*, 514 F.3d at 1251.

WSOU’s argument against indefiniteness misses the mark by focusing on the definition of a “dynamic MPLS tunnel” and then concluding that the LSP used by this “dynamic MPLS tunnel” must therefore be “dynamically determined.” *See* Dkt. No. 37 at 22-23. The term for construction is not “dynamic MPLS tunnel,” but rather “dynamically determined.” Merely saying that a dynamic MPLS tunnel uses LSPs that are “dynamically determined” does nothing to establish what “dynamically determined” actually means. WSOU’s expert declaration has the same shortcoming. *See id.*, Ex. 5, ¶¶ 27-28.

WSOU next argues that “dynamically determined” refers to changing the LSP “in response to factors such as traffic load and latency.” Dkt. No. 37 at 23. This argument also fails to clarify “dynamically determined.” The specification does not indicate when or under what conditions either of these factors are to be used, nor does it specify that these are the only factors at hand or in what conditions other undefined factors might come into play to cause dynamic determination. Moreover, this example provides no guidance on *how* the LSP is “dynamically determined.”

Finally, the standards that WSOU cites do not discuss how an LSP would be “dynamically determined” nor what factors, if any, would be used in such a determination. *Compare* Dkt. No. 37 at 23 (contending that “dynamically determined” is “well-defined”) *with id.* Exs. 3, 4 (standards cited as support that include neither a discussion of “dynamic MPLS” nor any indication of what the term “dynamically determined” could mean). They accordingly do not assist in discerning the meaning of the term.

The Court should therefore find this term indefinite.

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CERTIFICATE OF SERVICE

I hereby certify that on the 22nd day of March 2021, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system which will send notification of such filing to the following:

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